A Work Project, presented as part of the requirements for the Award of the Master's Degree in Management from the NOVA – School of Business and Economics

Exploring Materiality Disclosures in Financial Reporting

Evidence from Annual Reports in Portugal

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A project carried out on the Master's in Management Program, under the supervision of:

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January 2020

Abstract

This Work Project investigates *materiality* and its application on financial reporting. An analysis on Portuguese listed companies' annual reports from 2018 is conducted and addresses to regulators, standard setters, professional bodies and financial reporting users' seeking insights on the materiality context. It is concluded that materiality disclosures rely on judgement and are associated to company's characteristics. The vague regulation and diversity of disclosure results in lack of harmonization and comparability. It is recommended that regulation on materiality is reviewed such that companies have less flexibility in revealing what and the extent of information provided to annual report users about materiality.

Key words:

Materiality, Disclosure, Financial Reporting, Portugal

1. Introduction

Materiality is a central idea to financial reporting. It refers to the amount of information a company discloses or must disclose in the annual report when providing financial information of general-purpose to people outside the company (Elliot & Elliot, 2008). In auditing, the work of review the financial statements is made by sampling such that materiality sets the extent of the test's auditors are required to perform. Stakeholders' decisions rely on information provided by companies that are embedded by judgements of auditors and preparers of financial reports. Despite the importance of materiality, strict rules and detailed guidance about its reporting do not exist. Definitions set in regulation, such as in the International Accounting Standards (IAS) allow free individual interpretations and thus open to diversity in financial reporting.

This work used infrastructure and resources funded by Fundação para a Ciência e a Tecnologia (UID/ECO/00124/2013, UID/ECO/00124/2019 and Social Sciences DataLab, Project 22209), POR Lisboa (LISBOA-01-0145-FEDER-007722 and Social Sciences DataLab, Project 22209) and POR Norte (Social Sciences DataLab, Project 22209).

Materiality has been an issue among accounting professionals, as well as academics, regulators, standard setters, managers, or investors for several years (Hicks, 1964; Brennan & Gray, 2005; Aniceto & Doutor, 2019). International professional bodies such as the International Accounting Standards Board (IASB) and the International Financial Accounting Committee (IFAC) have recently highlighted the importance of materiality and call for discussion (IFAC, 2017; IFRS, 2019). Both bodies recognized the issue and pointed the lack of information exchange about materiality between financial statement preparers and stakeholders, a major contributor to the confusion attached to the concept.

Portugal provides a unique setting on materiality disclosures in financial reporting for several reasons. One of the supervising entities of the audit profession, the order of Portuguese independent auditors (*Ordem dos Revisores Oficiais de Contas*, OROC), has recently shed light on the subject with the publication of two articles in OROC magazine by Aniceto and Doutor (2018; 2019) about the application of materiality in audit procedures. Furthermore, the Companies Business Code (*Código das Sociedades Comerciais*, CSC), a body of rules that apply to shareholders and company's corporate governance, mentions materiality application in the management report[1]. However, the regulation is vague and admits non-harmonized and discretionarily practices concerning materiality. Moreover, there is no empirical study about materiality disclosures in financial reporting on the Portuguese context, to the best of our knowledge. Therefore, this Work Project aims at providing unique evidence from Portuguese listed companies and explores the disclosures on materiality made, to understand where in the annual report, to what items and how it is being applied. The research addresses regulators, standard setters and professional bodies, as it recommends on reviewing laws, standards and guidelines about materiality in financial reporting.

[1] Companies Business Law, Article 66th– *Management Report.*

This Work Project proceeds as follows. Section 2 discusses the definition of materiality, introduces the regulation and its context. Section 3 reviews the empirical research on materiality, while Section 4 sets the research questions, sampling criteria, data collection and preliminary data analysis. Section 5 discusses the research findings. Lastly, Section 6 concludes, highlighting the contribution, limitation, and directions for future research.

2. What is Materiality in Financial Reporting?

The notion of materiality emerged in the late 19th century, in the United Kingdom and United States (US). The word *material* was initially used in legal cases to distinguish insignificant from substantial issues (Edgley, 2014), the latter being material if has capacity to influence or change ones' opinion. One of the first mentions to materiality in accounting dates to 1940[2]; it addressed to accounting professionals which should make judgements concerning materiality (Hicks, 1964). Normative studies about materiality punctually appeared in the first half of the 20th century, but an acceleration in research happened after 1975 when the Financial Accounting Standards Board (FASB) announced it would examine the materiality concept with more depth. Following, in 1980, the FASB provided an official definition, which states that:

> *"Materiality is a pervasive concept that relates to the qualitative characteristics, especially relevance and reliability. Materiality and relevance are both defined in terms of what influences or makes a difference to a decision maker (...). A decision not to disclose certain information may be made, (...) because the amounts involved are too small to make a difference (they are not material).* (FASB 1980, p. 7, §1).

From the late 90s onwards, in the US, accounting bodies such as the American Institute of Certified Public Accountants (AICPA), the SEC and the FASB issued more definitions of materiality[3] and were followed by international bodies, namely the International Accounting Standards Board (IASB) and the International Auditing and Assurance Standards Board (IAASB). With respect to international financial reporting, the most followed standards are the

[2] The Securities and Exchange Commission (SEC) issued guidelines in *Regulation S-X* to set out the required form and content of financial statements, especially for public companies.
[3] Appendix 1 summarizes materiality definitions provided by several professional bodies.

International Financial Reporting Standards (IFRS) and the International Accounting Standards (IAS)[4]. The EC Regulation No. 1606/2002 endorsed the mandatory adoption of IFRS/IAS to financial reports of companies with shares listed in any European Union Stock Exchange for the years 2005 onwards. This international law applies to the consolidated financial reports of companies with shares listed in the Euronext Lisbon, among others. Companies which report under IFRS/IAS shall apply the materiality definition found in IAS 1[5]:

> *"Omissions or misstatements of items are material if they could, individually or collectively, influence the economic decisions that users make on the basis of the financial statements. Materiality depends on the size and nature of the omission or misstatement judged in the surrounding circumstances. The size or nature of the item, or a combination of both, could be the determining factor."* (IAS 1 2008, §7)

The IASB issued in 2018 an amendment to this definition, to be applied starting from January 2020 onwards, which adds the word *obscuring* to *omitting* and *misstating*, replaces *could influence* by *could be reasonably expected to influence* and replaces *users* by *primary users* (IAS Plus, 2018). When studying materiality, one needs to consider several perspectives that apply differently. In fact, the materiality application process[6] is a value chain with each contributor producing a document that makes part of the annual report. It starts with the management board producing the management report, the accountant who prepares and sign the financial statements, followed by the external auditor who verifies them and produces an audit report[7]. The process ends in everybody with access to the annual report, the users.

Financial information of general-purpose about the reporting entity is provided to people outside the company through the management report[8] and the set of financial statements[9], which

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[4] IFRS standards are issued by the IASB and the IAS were issued by the preceding IASC (International Accounting Standards Committee). The IASB substituted the IASC in 2001, following a restructuring of IASC's organization, transforming into a full-time standard setter. IASB revised and replace some IAS by IFRS.

[5] IAS 1 *Presentation of Financial Statements.*

[6] Appendix 2 contains a figure describing the materiality application process, the various pieces of financial reports and who is responsible for preparing them.

[7] The audit report consists in an independent opinion from the auditor, on whether the financial statements are in all material aspects, in according to the reporting framework (ISA 200, 2008, p. 72).

[8] Document prepared by the management board describing all types of information related to the entity.

[9] A full set of financial statements consists in five pieces: Statement of Financial Position, Statement of Comprehensive Income, Statement of Cash Flow, Statement of Changes in Equity and Notes to the Financial Statements. (IAS 1 2008, §10).

includes the notes with further information. Together with the management, the notes, and the internal and external audit reports, this is useful information to the company's stakeholders, which take decisions about the entity based on the information received.

The management board of a company and its accountant must agree on materiality levels to use when preparing the financial reports. Any information that is deemed *material* and thus, included in the financial statements, means that it can influence stakeholders' decisions and should be disclosed. According to the IFRS *Conceptual Framework* (2018), Presentation and Disclosure in financial reporting[10] are about providing effective information communication and format of display in the financial statements. Materiality judgements will impact stakeholder's decisions, and how the company recognizes, measures and discloses information in the report (KPMG, 2019). The materiality level can be set and expressed either in: monetary units, a fixed amount (the currency of reporting) that does not depend on the size or performance of the company[11]; or in percentage, if the materiality level is computed by multiplying a percentage (a specified amount of something divided by 100) to an indicator[12]. Once the *materiality level* has been set, preparers have a value threshold, to judge if a certain item or transaction is relevant to the company. Conversely, any information that management board members believe to be trivial, thus *not material*, may be omitted from the annual report.[13] However, this issue has been causing concern to preparers of financial reporting due to lack of guidelines to consistently apply materiality[14]. As a response, the IASB issued the IFRS Practice Statement: *Making Materiality Judgements*[15], to provide additional guidance in this matter as a

[10] Also based in Recognition – deciding to include in the statements an item that meets the definition of an element of financial statement; Measurement – decide about the basis for valuation of an item recognized as an element of the financial statements.
[11] For example, stating that a material item is equal or above five million euros.
[12] For example, stating that a material item is at least five per cent of Sales.
[13] As stated in IAS 1, "*an entity need not provide a specific disclosure required by an IFRS if the information resulting from that disclosure is not material*" (IAS 1 2008, p. 15, §31).
[14] Cases exist in which the regulator sets the materiality level. The Portuguese Corporate Income Tax Code *(Código do Imposto sobre o Rendimento das Pessoas Colectivas)* sets that tangible assets subject to depreciation with a unitary acquisition or production cost lower than 1,000€ can be deducted as cost for fiscal purposes in the year of initial recognition, unless part of an assets group that shall be used and depreciated together (CIRC, Article 31st)
[15] A description of the *Practice Statement* can be found in Appendix 3.

complement to IAS 1. Moreover, new financial reporting practices relating to sustainability and materiality, which are not of mandatory adoption, are Integrated Reporting[16] and the Global Reporting Initiative Standards (GRI)[17]. In Portugal, the Companies Business Code refers to applying materiality in the management report in Article 66th [18]. Moreover, Article 66th -B sets that public interest companies[19] shall include a set of non-financial information in the management report from 2018 onwards. This information shall be enough so that users understand the impact of the company on sustainability, social, gender quality, human rights and corruption issues. However, this regulation is vague and admits of diversity in reports, because companies are free to decide what to disclose, the extent and format of such disclosures.

According to Fields, Thomas and Vincent (2001) an accounting choice is "*any decision whose primary purpose is influencing the output of the accounting system in a particular way*". Even with the existence of endorsed regulation, financial reporting preparers are required to take decisions and exercise their judgement on accounting policy application. Fields et al. (2001) mention market imperfections influencing accounting choices, such as agency costs and information asymmetries. Souza and Lemes (2015) believe comparability in financial reporting is crucial to increases the usefulness of accounting information, that is, allow users to identify similarities and differences between items, comparing information among entities. Thus, accounting choice leaves room for diversity, implying non-harmonization and comparability limitations of annual reports and their information. Concerning comparability, the IASB is working in a new project[20] including the publication of a new standard to replace IAS 1. The goal is making financial information more useful while improving the communication to the

[16] Integrated Reporting is about communicating to stakeholder's relevant non-financial information, such as sustainability, strategy, human resources, operations, and corporate governance. (ICAS, 2015).
[17] The GRI sets that a material topic "reflects a reporting organization's significant economic, environmental and social impacts; or that substantively influences the assessments and decisions of stakeholders" (GRI, 2019)
[18] The management report shall include the company's financial risk management objectives and policies, exposure to price risks, credit, liquidity and cash flows, when those are materially relevant in the valuation of assets, liabilities, financial position and results in relation to the use of financial instruments.
[19] Decree-Law No. 225/2008, published on 20th November 2008, Article 2nd sets the criteria to be considered a public interest company https://dre.pt/pesquisa/-/search/439822/details/maximized.
[20] The IASB project is titled *Better Communication of Financial Reporting*.

users of financial statements (IFRS, 2019), by increasing the comparability of information in the profit and loss statement and disclosures in the management report. Regarding materiality, the new draft does not alter the definition, but adds guidance on the aggregation of items in financial statements depending on materiality[21]. It additionally refers that the IFRS Board considered providing quantitative thresholds for disaggregation of items[22], but the proposal was rejected to avoid conflicts with the materiality definition in the prevailing standards.

In the auditing profession[23], auditors need to choose a materiality level to test the company's accounts, in order to obtain evidence that the financial statements are free from material errors. Despite having straighter guidelines, auditors still need to exercise professional judgement when applying materiality. In conclusion, materiality appears to be a matter of judgement both in financial reporting preparation and auditing. With the importance of materiality on accounting and impact on financial statement reliability, a greater deal of attention should evaluate the process of its definition and to assess existing standards.

3. Literature Review

A significant amount of empirical research about materiality has emerged since the 80s of past century. First in auditing, possibly due to the adoption of the audit risk model in auditing standards[24] (Messier, Aasmund and Noona, 2005), whilst studies about materiality in financial reporting are more recent. Regarding methodology, these studies have frequently relied in questionnaires and interviews rather than secondary data, such as analysis of financial reports. Brennan and Gray (2005) and Messier et al. (2005) authored two literature reviews, summarizing findings concerning materiality in auditing and financial reporting.

[21] The IASB draft states that "*In the notes, it is the concept of materiality that drives aggregation and disaggregation. To achieve the objective of financial statements, items that have dissimilar characteristics shall be disaggregated into component parts when the resulting information is material*" (IFRS Standards, 2019).
[22] As an example, "*requiring separate disclosure of any balances over 10% of an entity's revenue*." (IFRS Standards Basis for Conclusion, 2019).
[23] Appendix 4 provides a detailed description about materiality application in the auditing profession.
[24] The audit risk model determines the total audit's risk and how to manage it. *Audit risk* = *Inherent risk* (risk of material misstatement without internal controls) x *Control risk* (risk that client's controls do not detect or prevent material misstatements) x *Detection risk* (risk that auditor does not detect material misstatement) (AICPA, 2019).

Past research confirmed the inconsistency of materiality judgements made by preparers, auditors and users of financial reports. Also, they identified various variables that impact those professionals' judgements, such as the size of the audit firm (Brennan and Gray, 2005) and the auditor's experience (Edgley, 2014). Messier et al. (2005) suggest that future research focuses on the judgements' variability when quantifying materiality, and the necessity to evaluate qualitative factors in auditors' judgements to adjust detected misstatements on the financial statements. Brennan and Gray (2005) found lack of disclosure in financial statements in respect to materiality, both in preparers' and auditors' perspectives, and recommend that in order to increase understandability, at least the materiality levels used should be revealed. Moreover, Brennan and Gray (2005) highlight what is called *expectation gap*, that is - the stakeholders of the company believe the financial statements do not carry errors and would apply higher levels of materiality than preparers or auditors. This suggests lack of communication, and little understanding for the auditor's work, that cannot test all company's transactions. Also, preparers have incentives to apply higher materiality values, implying more aggregation of items and less disclosure, therefore, less work and details in preparing the financial statements.

Houghton, Jubb and Kend (2011) investigate the knowledge about materiality in Australia, based in five focus groups and 58 interviews amongst individuals of key stakeholder groups such as auditors, users of audit reports, regulators of audit services, auditing standard setters and auditee management. It is concluded that stakeholders do not have a clear understanding of materiality and they believe more disclosure together with education are key issues to reduce the expectation gap. However, some auditors and regulators argue that disclosure would be detrimental due to influence attempts by the management on auditors' judgements, or that management awareness of the materiality level used by auditors might result in immaterial misstatements done on purpose. Lai, Melloni and Stacchezzini (2017) investigate the meaning of materiality to preparers in Integrated Reporting (IR) of an Italian company by conducting interviews. For them, materiality is utterly connected with the company's strategy, such that IR should include actions required to achieve strategic objectives, but actions not linked to strategy may not be considered material enough to be reported. Difficulties in applying materiality in non-financial reporting are also discussed, by highlighting that non-financial information is often not quantifiable, and it is not possible to establish unique thresholds when an event might impact other forms of capital besides financial. Furthermore, Boterenbrood (2017) compared the materiality levels estimated by preparers and auditors, based on a sample of financial statements from Dutch companies in 2007 and concluded that the former used lower materiality levels than the latter. The author recommends more disclosures would be a path towards transparency and would result in increased knowledge on materiality and actual accuracy levels of financial statements.

Empirical research about materiality in the Portuguese context is scarce. The few existing master theses confine to materiality in auditing. Costa (2010) investigates the similarities on materiality judgements between auditors and users of financial statements. Based in a survey between Portuguese independent auditors and Portuguese credit analysts, results suggest that the materiality level appointed by auditors is lower than the one appointed by credit analysts. Magalhães (2010) conducts a survey amongst 32 Portuguese independent auditors' societies (*Sociedades de Revisores Oficiais de Contas,* SROC). The results suggest that most auditors use internal regulation to quantify materiality. Despite the importance of qualitative factors when judging the materiality of misstatements, 73% of the respondents mention quantitative factors have more relevance in their evaluation.

To the best of our knowledge, no research about materiality on financial reporting, based on secondary data of Portuguese companies exists. Acknowledging the expectation gap between financial reporting preparers and users, vague regulation, and the attention given by professional bodies, such as the IASB on-going project about communication in financial reporting involving materiality, it is of utmost relevance to study the materiality disclosures in financial reporting. This Work Project aims at investigating materiality disclosures in listed Portuguese companies' annual reports that apply IFRS standards. The research focuses in the management and accountants' perspectives of materiality besides the auditors' view.

4. Methodology and Data

4.1 Research Questions

This Work Project investigates the disclosures about materiality in annual reports from Portuguese companies listed in Euronext, with the aim at exploring and get evidence of who, what, where and how materiality is mentioned in the annual report. Eight research questions are outlined, as follows:

RQ1: What wording is used when disclosing about *materiality*?

RQ2: Where in the annual report is *materiality* disclosed?

RQ3: Does the annual report provide a definition of *materiality*?

RQ4: Does the annual report quantify *materiality*? Which criteria is used?

RQ5: How do companies present the information about *materiality*?

RQ6: To what elements of the financial statements is *materiality* being applied to?

RQ7: Which is the degree of *materiality* disclosure?

RQ8: Is there any association between the characteristics of *materiality* disclosure and the characteristics of the company?

To characterize the materiality disclosures of the companies, the following variables are analysed; *Wording* (RQ1, materiality, material/materially or immaterial/not material), *Location* (RQ2, management report, notes to financial statements or audit report), *Definition* (RQ3, if annual report provides a definition of materiality), *Quantification* (RQ4, if materiality is measured and if so, if the criteria used is either monetary or a percentage), *Format of disclosure* (RQ5, text or figure) and *Items* (RQ6, should disclose or discloses, balance sheet or income statement element). Univariate statistics, such as measures of central tendency, symmetry and dispersion are used to describe the basic features of the sample and answer to RQ1 to RQ6.

A Materiality Disclosure Index (MDI) puts together and examines the various individual characteristics of materiality disclosures, in order to assess comparability (RQ7). Compiling the results obtained from the previous research questions, the point is to conclude on the idea if understandability and comparability problems exist when disclosing about materiality. The MDI includes the following four variables, which characterise the materiality disclosure: Number of times materiality appears in the annual report (d_i); Disclosure of materiality definition; (d_j) Quantification (d_k), and Matrix (d_l). The index does not weight variables. It varies from 0 per cent if there is not disclosure at all to 100 per cent. The Materiality Disclosure Index[25] is calculated for each company *m* with the following formula:

$$\boldsymbol{MDIm = \left(\sum_{ijkl=1}^{n} di\,m + djm + dkm + dlm \right) \div 4} \qquad [1]$$

Where d_i= 1 if the item *di* is disclosed; d_i=0 if the item *di* is not disclosed; *m* = 1, 2,…,38.

Bivariate statistics is used in RQ8 to find association between company characteristics and materiality disclosures, such as size (measured by *Market Cap*, *Total Assets* and *PSI20*) and financial performance (*EBT*, *PER and Market-to-Book*). The direction and the strength of the association between variables is assessed with the Pearson's correlation coefficient[26] and results are validated through the p-value[27]. All the statistical analysis is performed using SPSS[28].

4.2 Sample

The universe of this research consists of all the 55 Portuguese companies listed in the Euronext Lisbon Stock Exchange[29]. Companies being listed in the stock exchange guarantees easier access to the information required and completeness of the annual reports. Listed companies also present higher implications in terms of information provided to shareholders.

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[25] Appendix 11 provides the Materiality Disclosure Index results for the 38 companies.
[26] The Pearson correlation coefficient varies between -1 and 1. A coefficient of +1 means that two variables are perfectly positively correlated. If one variable increases, the other increases by a proportionate amount. Conversely, a coefficient of −1 indicates a perfect negative relationship: if one variable increases, the other decreases by a proportionate amount. A coefficient of zero indicates no linear relationship. (Field, 2009).
[27] The *p-value* is considered significant at the 0.01 level (*p-value*<0.01) or at the 0.05 level (*p-value*<0.05).
[28] Statistical Package for the Social Sciences.
[29] Appendix 6 provides a table with the initial and final sample.

The period of analysis is 2018[30], the last year with a complete availability of annual reports. It is noticeable that 2018 is the first year the Portuguese Companies Business Code requests that companies of public interest which hold subsidiaries, shall mandatorily disclosure non-financial and diversity information in the management report.

Four exclusion criteria were used to obtain the final sample. The first criterion consists in excluding companies that do not follow IFRS due to comparison purposes. Based on this criterion, thirteen companies[31] were excluded, because they adopted the domestic standards NCRF (*Normas Contabilísticas de Relato Financeiro*) in annual reports. Additionally, two companies with sector-specific financial statements were excluded. Another company was excluded due to the non-availability of complete data about the annual report[32]. Finally, another company was excluded because it did not engage in market transactions since 2017.[33]

The final sample is composed by 38 companies, all listed in Euronext Lisbon Stock Exchange, which belong to 11 different industries[34]. Seventeen companies (45%) in the sample belong to PSI20[35]. Regarding Market Capitalization, companies ranges from €755 thousand, corresponding to *I. G. Pará,* and €14,945,000 thousand corresponding to *EDP*. The average market capitalization of the total sample is €1,545 thousand and median €131 thousand, suggesting a large dispersion regarding size. The average size of PSI-20 companies is €3,348,882 thousand while for companies not belonging to PSI-20 it is € 85,465 thousand. Differences between the two groups of companies can be observed in other indicators, such as Total Assets. In average, PSI-20 companies have total resources of €6,543,300 thousand and

[30] *S. L. Benfica* and *F. C. Porto* period of reporting ends on 30th June 2018 and not on 31st December 2018.
[31] *Copam, Conduril, Compta, Fenalu, Flexdeal, Litho Formas, Oli Sistemas, S. C. Braga, Monumental Residence, Multi 24, Nexponor, Sporting C. P.* and *Patris* were excluded companies due to this criterion.
[32] *ISA* was excluded due to inexistence/non-public availability of the independent auditor report.
[33] *Sociedade Águas da Curia, S.A.* was excluded due to this criterion.
[34] Appendix 7 contains a chart with additional information on the 38 company's industries.
[35] Companies which belong to PSI20 shall meet two criteria: i) free float market capitalization higher than 100 million euros; ii) free float capital dispersion is at least 15 percent. If the number of companies meeting these criteria is under 18, companies with free float market capitalization under 100 million euros can be included (Euronext, 2019). Free float market capitalization is calculated by using the shares effectively available in the market, that is, excluding locked-in share held by insiders, promoters and governments. (Investopedia, 2019).

not PSI-20 companies an average of €386,822 thousand. Using EBT as proxy for performance, the total sample ranges from -€18,154 thousand, corresponding to *Pharol*, to €1,689,000 thousand corresponding to *Galp*. Four companies (10%) reported negative results in 2018[36].

The market of auditing companies is largely concentrated in the *Big 4*[37], this can be verified in the final sample of this Work Project. Thirty companies (79%) in the sample selected a *Big 4* to issue the audit report. From the 38 audit reports, Six audit reports (16%) include an emphasis of matter[38] or a *material* uncertainty related to going concern[39]. Only two audit reports, from *Inapa* and *Pharol,* have qualified opinions, which means the auditors believe in the accuracy of financial statements of these companies except for a certain matter.[40] Thirty reports (79%) have unqualified opinions, meaning that auditors believe the financial statements present, in all material aspects, a fair view of the company´s financial position and performance. Therefore, the auditor has made a professional judgement leading to the conclusion that the annual reports do not carry any significant errors which might affect users' decisions.

4.3 Data Collection

Data was collected from the 2018 annual reports of the 38 Portuguese listed companies selected for the analysis of materiality disclosures. The annual reports were directly downloaded from companies' websites or the CMVM website when it could not be found in the first, and later the information was hand-collected by the researcher from the companies' annual reports. It is worth mention obstacles faced when collecting data, such as difficulties in accessing the reports in the websites. With respect to the financial statements, 26 companies (68%) report both consolidated and individual statements, and 12 companies (32%) only report the consolidated ones. Moreover, 35 companies[41] (85%) report non-financial information.

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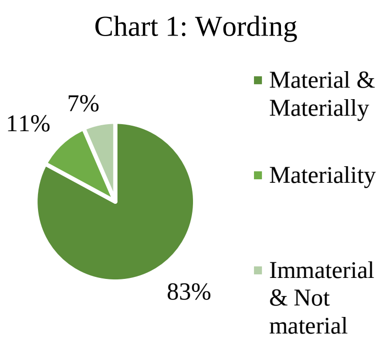
[36] *I. G. Pará, Pharol, Inapa* and *Reditus.*
[37] *Deloitte, KPMG, EY* and *PwC*.
[38] An *emphasis of matter* is a topic which the auditor judges as necessary to draw users' attention because it is believed to be crucial for the understanding of the financial statements.
[39] When there is doubt that the company has resources to keep its operations for the next 12 months.
[40] A detailed statistical analysis of other variables is provided in Appendix 6.
[41] *Sonagi, I. G. Pará* and *Farminveste* do not report non-financial information.

The method used to collect data about materiality was content analysis of the annual reports. The content analysis is performed by conducting a word search using *Reader Total Search* from Adobe Acrobat Reader. Any *materiality* presence is accounted for, in text, number or figure format. This is a hard-working method, which consisted in examining a total of 10,329 pages from the 38 annual reports, that provides a considerable amount of useful information; however, one appointed limitation is that it assumes the most mentioned words are the ones with greatest significance (Stemler, 2000). It also has the limitation of being dependent on the researcher ability. Subsequently, the sections of the annual report where the content appeared is categorized into Management Report[42], Notes to Financial Statements[43] and Audit Report. Moreover, a 42 percentage of the annual reports observed are written in Portuguese[44] and the cases existed in which two reports are made available with the English report being less complete as the Portuguese[45]. Data collected includes characteristics of the company, the external auditor issuing the independent report, details about the annual report[46] and about materiality disclosures. The process of data collection resulted in a database[47] with information about materiality, namely the number of times that materiality words appear in each annual report section and characteristics of the disclosures, that is, if a definition, measurement, or other type of disclosure is found. The database is a contribution of this Work Project that offers for future research, with unique data about materiality disclosures of Portuguese companies.

[42] The Corporate Governance and Sustainability Report are part of the Management Report.
[43] When annual report contained both consolidated and individual financial statements, it was verified that some of the materiality words were repeated in both the notes to consolidated and unconsolidated financial statements. This situation occurred in 26 annual reports, and the repetitions were not considered.
[44] There was necessity of disclosures translation and a need for Portuguese literacy.
[45] The Portuguese version of *Ramada'*s annual report contained consolidated and individual accounts, plus the respective audit reports. The English version included only the consolidated accounts and no audit report.
[46] If presented consolidated or individual financial statements and if non-financial information is reported.
[47] 1,443 cells contain 39 rows and 37 columns (the variables).

5. Results

5.1 Wording (RQ1)



When searching for *materiality* and related words in the annual reports, it is verified that all contain presence of materiality. A total of 1,190 mentions to *materiality* were found in the 38 annual reports. *Galp*'s annual report discloses the greatest number of words (57) and *Sonagi* the annual report with the minimum (14). On average, each annual report contains 31 materiality words, while the middle value, the median, is 29 words and the most common value, the mode, is 22 words. The standard deviation is equal to 10, suggesting a large variability of the sample. However, companies belonging to PSI20 have on average 38 words in the annual report, while those not belonging to PSI20 present an average of 25 words. The most frequent words are *material* and *materially* with a weight of 83%, while *materiality* corresponds to 11%. Nine companies[48] (24%) do not use the word *materiality* in their annual report. The words *immaterial* and *not-material* correspond to 7% of the total words found, appearing in 23 companies (60%).

5.2 Location (RQ2)

Regarding the location, the annual report is divided into Management report, Notes to financial statements and Audit report. From the total 1,190 mentions to *materiality*, circa 48% of the words are in the Audit Report, 28% in the Notes and 24% in the Management Report.

Wording	Management Report	Notes	Audit Report
Total	286	332	572
Average	7.53	8.74	15.05
Median	4	8	15
Mode	1	8	15
Maximum	32	21	19
Minimum	0	1	10
Range	32	20	9
St Deviation	8.10	4.18	1.89

Table 1: Descriptive statistics about wording by section of the annual report

[48] *I. G. Pará, Reditus, Lisgráfica, Orey Antunes, Martifer, Farminveste, T. Duarte, Estoril Sol* and *Mota-Engil.*

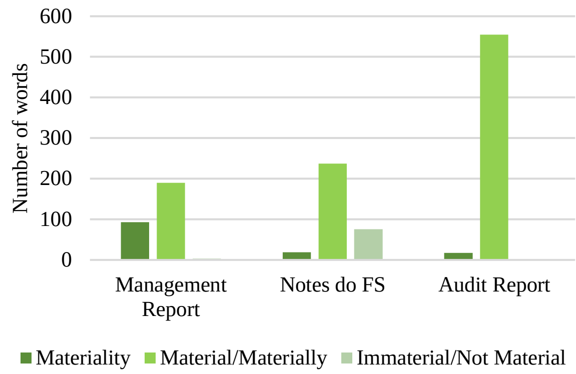
Table 1 provides descriptive statistics on materiality wording by section of the annual report. The management report is the section which presents the most disperse values across companies[49], which is expected considering the existing vague laws, such as the Portuguese Companies Business Code that leaves room for individual interpretation and disclosures. On average, each includes eight mentions of materiality, moreover, half of the companies mentions materiality in the management report at least four times (Median=4). Provided that the average is higher than the median (7.53>4), the distribution is asymmetrical and skewed to the left. Moreover, the value most observed is zero (Mode=0), more specifically, there are six companies[50], none of them belonging to PSI-20, which do not mention materiality in the management report. Otherwise, *Galp* ranks on top with 32 words. In the notes to financial statements, the average is nine words per annual report, ranging from a maximum of 21 words in *SONAE SGPS* and a minimum of one word in *I. G. Pará.* On average, each audit report includes 15 times *materiality* related words. The median is also 15 words, meaning that half of the audit reports mention the materiality at least 15 times. It should be considered that auditors in Portugal follow a standard format of the independent report issued by OROC[51] with several paragraphs including materiality words, presenting very little variances between reports. Both in the notes and the audit report, the distribution is symmetrical because the average, the median and the mode are close from each other.

In all the sections of the annual report, *material* and *materially* are the most frequently used words. A special attention is given in understanding where in the annual report an excuse for not disclosing, that is, the words *not material* or *immaterial* are most used. No mentions of these words are found in the audit report, and only three are found in the management report

[49] Can be observed thought the range statistical indicator (Maximum value – Minimum value).
[50] *I. G. Pará, Farminveste, Lisgráfica, Novabase, Reditus* and *Sonagi.*
[51] The Technical Application Guide Nº1 (*Guia de Aplicação Técnica, GAT Nº1*) by OROC presents the model of the Audit Report for consolidated and individual financial statements of public interest companies and others, based on the application of ISAs and Portuguese Techincal Normas (Normas Técnicas)

from two companies[52]. However, 76 mentions of these words can be found in the notes, that is, 23% of the total words found in this section, suggesting that accountants often excuse from disclosing due to materiality reasons, and the management board agrees by signing the financial statements. Nevertheless, 15 companies (39%), do not use expressions such as *not material* or *immaterial* on the annual report. In sum, auditors are the ones paying most attention to materiality, something natural because there is more guidance and standardization in disclosing materiality in the auditor's report, plus additional sanctioning from the supervising bodies.

Chart 2: Wording by section of annual report



5.3 Definition (RQ3)

Out of the 38 annual reports analysed, only two companies (5%) express a definition of what they consider to be material, *Galp* and *EDP Renováveis*. The two companies rank second and fourth in market capitalization, respectively. Table 2 describes the definitions.

Company	Definition
EDP Renováveis (Annual Report 2018, p. 85).	*"An issue is considered material when it influences the decision, the action and the performance of an organization and its stakeholders".*
Galp (Annual Report 2018, p. 24)	*"The material topics are those that are considered more relevant, as they reflect the economic, social and environmental impacts of the organization, or they influence substantially the stakeholders' evaluations and decisions. The materiality is the threshold that defines which topics are relevant enough to be reported".*

Table 2: Materiality definition in the annual reports

Evaluating the definitions, one can understand that for these companies, *materiality* is the influence a matter has on stakeholders and the impact it can have on the organization. Only *Galp* refers that materiality defines what topics are relevant enough to be reported. Moreover, the *Galp* definition is closer to what GRI considers as a material topic than to the definition stated on IAS 1[53], while *EDP Renov.* discloses a broader definition closer to IAS by mentioning

[52] *Ibersol* and *Altri*.
[53] Section 2 provides description on these definitions.

the influence on users' economic decisions social and excluding potential social and environmental impact. Furthermore, the Portuguese Companies Business Code also sets that public interest companies must disclose a set of non-financial information. However, it is also vague and uncharted, allowing for flexibility and diversity of annual reports' presentation and disclosure. No regulation states that companies need to expose what they consider as material to stakeholders, which would be fundamental for the understanding of financial statements.

5.4 Quantification (RQ4)

From the 38 companies, only seven (18%) provide quantifiable information on materiality, all of them belong to PSI-20 and represent 65.4% of the total market capitalization value. Five quantifications can be found in the management report, one in the notes and one in the appendix. As mentioned in Section 2, companies can quantify materiality in monetary units or in percentage. Table 3 summarizes the seven quantifications[54].

<table>
<tr><th>Company</th><th>Location</th><th>Item</th><th>Threshold</th><th>Criteria</th></tr>
<tr><td>Galp</td><td>Appendix</td><td>Other provisions</td><td>€100K</td><td rowspan="4">Monetary</td></tr>
<tr><td>EDP</td><td>Management Report</td><td>Litigation risks</td><td>€2.5M</td></tr>
<tr><td>REN</td><td>Management Report</td><td>Related-party transactions</td><td>€1M; or €1M based on purchase/Sale of assets or provision of services; €100M required in loans.</td></tr>
<tr><td>Inapa</td><td>Management Report</td><td>Related-party transactions</td><td>€750K (Sales); €500K (Other Transactions);
€10M (Loans);
€5M (Financial investments);</td></tr>
<tr><td>J. Martins</td><td>Management Report</td><td>Related-party transactions</td><td>€3M or 20% of Sales;
€5M accumulated to previous transactions</td><td>Both</td></tr>
<tr><td>C.Amorim</td><td>Management Report</td><td>CO^2 Emissions</td><td>7%</td><td rowspan="2">Percentage</td></tr>
<tr><td>Mota-Engil</td><td>Notes to Financial Statements</td><td>Goodwill impairment</td><td>5% (projected cash flows);
0.5% (growth rate); 0.5% (discount rate).</td></tr>
</table>

Table 3: Materiality quantifications and criteria used.

Three companies disclose the level of materiality for which related party transactions should be reported. For example, *J. Martins* states:

> "*Transactions between the company and shareholders with qualified holdings or entities are reported to the audit committee if its amount is equal or higher than three million euros or 20 per cent of the shareholder's sales, if its amount in addition with other amounts from previous deals in the year is equal or higher than five million euros, or if regardless of the amount, it can cause a material impact on the company's reputation concerning independence*" (*Jerónimo Martins* Annual Report 2018, p. 186).

[54] Appendix 8 provides additional detail on the seven quantifications.

In the case of *Galp*, the company applies it to Other Provisions[55] and states that "*any payment to a public administration, either in a single payment or in set of multiple payments, is reported if its value is above €100 thousand*" (*Galp* Annual Report 2018, p.251), which is about one per cent of total *Galp*'s assets. Other materiality quantification can be found in *EDP*'s management report, referring to litigation risks faced by the company, more specifically possible losses for non-compliance with tax, labor, or civil legislation that have economic and reputational impact. *EDP* states that "*it reports all cases considered material, that is, with a contingency over €2.5 million*" (*EDP* Annual Report 2018, p.167), a value corresponding to 6% of total *EDP*'s assets. Once again, one can observe the choice that companies have in deciding the threshold. In this case, three companies find that disclosing the materiality of related party transactions is important for understanding the company's position. Flexibility in financial reporting can help companies adjust the information disclosed, depending on its business. However, results suggest that largest companies are paying the most attention to materiality and stakeholders are receiving distinct levels of information.

5.5 Format of Disclosure (RQ5)

The textual format is used by all companies in the materiality disclosures. Furthermore, seven companies[56] (18%) display a materiality matrix[57]. These companies belong to PSI-20 and represent 45% of the total sample market capitalization value. All the companies showing this format of disclosure follow the GRI Standards[58]. The matrix works as a visual representation of topics prioritization by the company[59] and consists in the *x*-axis measuring the degree of importance or the *materiality* of a topic for the organization while the *y*-axis measures influence level of the topic on stakeholders' decisions. It is verified that both qualitative and quantitative

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[55] Provision is a liability which the company expects to incur and chooses to recognize in advance of knowing its exact amount.
[56] *EDP Renováveis, CTT, Altri, C. Amorim, SONAE SGPS, Galp,* and *NOS*. In the case of *NOS*, the 2018 annual report present a link to the 2017 annual report where the matrix is found.
[57] Appendix 9 provides detailed description on the seven matrices.
[58] A guidance to identify material topics by GRI Standards can be found in Appendix 10.
[59] The topics in the right-upper corner of the matrix are the ones to be reported.

(numerical or ordinal) scales are used by companies in the matrices[60]. GRI Standards (2016) suggests engaging in surveys with stakeholders to understand their opinion on the company's relevant topics and construct the matrix. With this figure, the users of the annual report get a better perspective of materiality, given that figures provide better visualization, systematization and analysis of information, allowing to understand the various topics not considered relevant enough by the company although directly connected with its operations. Topics identified in the matrices are diverse, while the majority relates to sustainability, other common topics found are human resources management, corporate governance and R&D. The Portuguese Companies Business Code require public interest companies to disclose non-financial information but does not specify anything related to a materiality matrix. Results continue to highlight non-harmonization and vast diversity of companies' annual reports concerning materiality.

5.6 Items (RQ6)

The notes to financial statements, are usually divided into two parts: i) a summary of the significant accounting policies adopted by the company when preparing the financial statements, that is, the reporting standards describing what companies should disclose in the notes; ii) the actual notes of each item, with detailed description on its content. It is worth noticing that 18 companies (47%) do not mention materiality in this latter part of the notes, while all companies comment on materiality in the former section.

When analysing the first part, it is observed that references to materiality constantly appears when companies refer to changes in accounting policies to be applied in the future, in this case to the change of the materiality definition in IAS 1. However, four companies[61] (11%) do not comment on such changes, only naming the new IFRS to start being applied in 2019. Thirty-five companies (92%) mention those changes, saying that the changed standards have

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[60] *C. Amorim* applies a High-Low scale, *CTT* uses a 0-100% in *y-axis* and 0-7 in *x-axis*, *EDP Renov.*, *Galp, NOS* and *SONAE SGPS* use a -/+ scale and *Altri* does not apply any scale.
[61] *I. G. Pará, Galp, S. L. Benfica* and *Semapa.*

not been applied earlier in 2018. Regarding those mentioning the change in materiality definition, 22 of the 35 companies declare that no impact on the financial statements will arise from the changes in IAS 1. Five companies declare that the impact is still being analyzed and three state that they have not concluded on the impact of the changes but expect that the future adoption produces no significant impacts. Five companies mention the changes but not comment on its future impact. These results suggest that companies consider the changes in the definition of materiality will not result in any impact for financial reporting. Additionally, in main accounting policies, 25 companies (66%) use materiality words in balance sheet items, while there is no reference to materiality regarding income statement items. The most frequent is financial instruments, in which seven companies comment on IFRS 9[62] policy and its impact of financial statements. Using materiality when referring to subsequent events is also common, with 22 companies (58%) stating that subsequent events which provide information on conditions occurring after the statement of financial position date are disclosed if material.

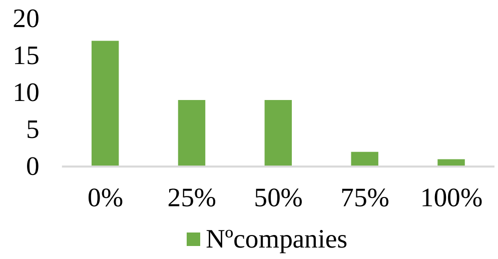
In the second part of the notes, using materiality in the balance sheet is more frequent, happening in 16 companies (42%), but only six companies use it in income statement items. Six companies (16%) refer to materiality about Goodwill, describing the effect of changes in assumptions used to calculate impairments, while only *Mota-Engil* quantifies it. Other example is about Provisions and Contingencies, in which four companies mention risks from involvement in legal proceeding and the materiality of its impact in the financial statements. Regarding notes about income statement items, five companies apply materiality in Income tax, referring to the effect resulting from revisions of the tax authorities and that corrections of previous periods will not have any material impact. Overall, results from this question suggest that no specific pattern is found about disclosing materiality in the notes to financial statements, once again provide evidence of the diversity of disclosures in financial reporting.

[62]IFRS 9 *Financial Instruments*, in force since 2018, sets a new accounting policy on financial instruments impairment.

5.7 Materiality Disclosure Index

Disclosure indices serve the purpose to measure the quality of financial reporting, that is, the quality of information received by users of annual reports (Hossain, 2015). The MDI[63] is calculated according to formula discussed in Section 4.2. Materiality word appearances lower than the median (29 words) and no additional materiality disclosures result in 0% index while 100% means that the annual report contains materiality appearances higher than median and all additional disclosures are made. *Galp* is the only company with an MDI of 100%, while *C. Amorim* and *EDP Renov.* obtain 75%. Nine companies (24%) have an MDI of 50% and other nine have an MDI of 25%. The MDI in 17 companies (45%), corresponding to the mode, is 0%, that is no disclosures and thus a considerable margin to improve materiality disclosures. Regarding measures of central tendency, the MDI average is 24%. The median is 25%, that is, at least half of the sample have an MDI lower or equal than 25%. Again, the results from the MDI prove the dispersion in financial reporting about materiality disclosures by Portuguese listed companies. As stated in Section 2, materiality disclosures always depend on judgement, and the flexibility in financial reporting leads to non-comparability and non-understandability, jeopardizing the quality of accounting information (Souza and Lemes, 2015). Observing the MDI results, transparency problems resulting from the vague regulation exist about materiality. In this case, most companies, auditors, management board members and accountants of such companies deem there is nothing to disclose in the annual financial report.

Chart 3: Materiality Disclosure Index



[63] Appendix 11 provides the Materiality Disclosure Index results for the 38 companies.

5.8 Association between Materiality Disclosures *versus* Companies' Characteristics

Previous results show signs that larger companies tend to disclose more on materiality. In fact, there is statistical evidence[64] that the Number of materiality disclosures is significantly and positively correlated with size, proxied by Market Capitalization (*r*=0.50; *p-value*=0.00), and Total Assets (*r*=0.30; *p-value*=0.04) suggesting that larger and more traded companies disclose more materiality information in annual reports. Moreover, it is found that companies with higher EBT (r=0.57; p-value=0.00) and Market-to-Book ratio are the ones with higher materiality disclosure (*r*=0.46; *p-value*= 0.00), that is, those with better market perception and whose investors believe the company's equity book value is undervalued. It appears that stakeholders might have interest in what companies say about materiality in the annual reports.

Regarding materiality disclosed in the management report, it is significantly correlated with the Market Capitalization (*r*=0.59; *p-value*=0.00), EBT (*r*=0.64; *p-value*=0.00) and PSI20 (*r*=0.64; *p-value*=0.00). It was verified that managers from largest companies are pursuing new standards related to sustainability, requiring disclosing additional information about materiality in the management report, such as matrices, which results in larger companies having more materiality disclosure. No relationship is found between materiality in the notes and company characterization variables except with PSI20 (*r*=0.37; *p-value*=0.02), and as expected, materiality in the audit report is not associated with variables characterizing the company. As mentioned in Section 5.2, audit companies follow specific rules when issuing the audit report, therefore it does not depend on the characteristics of the company issuing the annual report.

Lastly, correlation between the MDI and company characterization variables is investigated. It is found that the MDI is positively correlated with variables of size such as Market Capitalization (*r*=0.60, *p-value*=0.00) and performance such as EBT (*r*=0.66; *p-value*=0.00). Furthermore, companies with higher MDI are found to be the ones with higher

[64] Statistical results used in RQ8 are obtained through SPSS and can be found in Appendix 12.

PER (r=0.33; *p-value*=0.05) and Market-to-Book Ratio (r=0.33; *p-value*=0.04). It can be concluded that higher MDI assumes better quality of financial reporting (Hossain, 2015), which is positively and significantly associated to the company's size and financial performance, largest demand and better market perception from stakeholders. Smaller companies, which are not under the same market and stakeholder pressure, are concluded to have poor materiality disclosures. As mention in Section 2, this implies loss of comparability among annual reports, which is expected given the diversity of accounting choices, that may be influenced by external factors (Fields et al., 2001) and from the vague existing law.

6. Conclusion

The purpose of this Work Project was to investigate materiality disclosures on Portuguese listed companies' annual reports from 2018. Standard setters, regulators and professional bodies have not agreed in a singular definition or calculation method for materiality. In financial reporting, vague regulation and limited guidance exists on what and how companies are required to disclose, besides stating that a material topic "influences the economic decisions of the financial report users", providing margin for multiple interpretations and resulting in financial reporting diversity. However, problems such as non-harmonization of the reports result mainly in lack of information comparability. Considerable diversity on materiality disclosures were found in Portuguese companies' annual reports, between the largest and more traded companies and the smaller ones. Some annual reports were found to be descriptive on materiality and non-financial information, corresponding to those following sustainability standards. The management report was the section with largest variability, where managers have most freedom to decide disclosures. In the notes to financial statements, differences were found but not as dependent on the company size, however, companies more often mention what they should disclose than actually disclose it. Materiality in the audit report showed to be constant in annual reports regardless of company characteristics.

Therefore, this Work Project addresses to standard setters, regulators and professional bodies, recommending a revision of regulation about disclosing materiality on annual reports. It is noticeable that these entities understand the importance of materiality and continue raising attention to the subject with the revision of IAS, the issuing of guidelines for financial reporting preparers to apply materiality and long-term projects aiming to improve financial report quality and comparability. Despite the efforts to clarify the materiality concept in the last years, an analysis of most recent Portuguese annual reports still suggest that in 2018, the extent, the method and type of information disclosed about materiality is significantly and positively associated with size, financial performance, market perceptions and demand of stakeholders, that is, there exists no harmonization of materiality disclosures on the annual reports. The results obtained suggest that materiality disclosures are important to stakeholders' perceptions, impacting their decisions about the company.

This Work Project presents limitations. A search for the word *significant,* which has similar meaning to *materiality* was not conducted, and could be a topic for future research. Moreover, the analysis performed is based in single year, confines to Portuguese listed companies, and to univariate and bivariate analysis. Future research can expand to more periods, to financial or non-public companies and other countries, providing more information and comparability with other realities, while contributing to a better understanding of materiality in financial reporting. This pioneer Work Project is an exploratory study focusing on descriptive statistics and studying association relationships. Future research could complete the analysis by investigating the determinants of materiality disclosure, that is, study causal relationships between variables that associate to materiality. Finally, this Work Project will serve for the international and ongoing IASB project, providing unique results on materiality, with a database that can be completed with additional variables. Interviews with financial report preparers could also be conducted to obtain a first-hand perspective on the topic.

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8. Appendices

Table of Contents

Appendix 1. Definition of Materiality in Different Standards

Issuer	Standards	Definition
SEC (United States)	Regulation S-X, 17 CFR 270 8b – 2: Definitions. Paragraph b). Issued in 1940	*"The term material, when used to qualify a requirement for the furnishing of information as to any subject, limits the information required to those matters about which an average prudent investor ought reasonably to be informed."*
FASB (United States)	Statement of Financial Accounting Concepts No. 2 Qualitative Characteristics of Accounting Information Paragraphs 123-125. Issued in 1980	*"Materiality is a pervasive concept that relates to the qualitative characteristics, especially relevance and reliability. Materiality and relevance are both defined in terms of what influences or makes a difference to a decision maker (…). A decision not to disclose certain information may be made, (…) because the amounts involved are too small to make a difference (they are not material). Magnitude by itself, without regard to the nature of the item and the circumstances in which the judgment has to be made, will not generally be a sufficient basis for a materiality judgment. The Board's present position is that no general standards of materiality can be formulated to take into account all the considerations that enter into an experienced human judgment. Quantitative materiality criteria may be given by the Board in specific standards in the future, as in the past, as appropriate. "*
FASB (United States)	Concepts Statement No. 8, Conceptual Framework for Financial Reporting. Paragraph QC11. Issued in 2010, amended in 2018	**2010:** "*Information is material if omitting it or misstating it could influence decisions that users make on the basis of the financial information of a specific reporting entity."* **2018:** "*the omission or misstatement of an item in a financial report is material if, in light of surrounding circumstances, the magnitude of the item is such that it is probable that the judgment of a reasonable person relying upon the report would have been changed or influenced by the inclusion or correction of the item.*
IASC/ IASB (International)	IAS 1, Paragraph 7 First issued in 1975 by IASC. Latest change in 2018 on the materiality definition by IASB.	**2008:** *"Information is material if omitting it or misstating it could influence decisions that users make on the basis of financial information about a specific reporting entity. In other words, materiality is an entity-specific aspect of relevance based on the nature or magnitude, or both, of the items to which the information relates in the context of an individual entity's financial report."* **2018:** *"Information is material if omitting, misstating or obscuring it could reasonably be expected to influence decisions that the primary users of general-purpose financial statements make on the basis of those financial statements, which provide financial information about a specific reporting entity."*
IAASB (International)	ISA 320, Paragraph 2 Issued in 1994. Latest revision in 2009.	*"Misstatements, including omissions, are considered to be material if they, individually or in the aggregate, could reasonably be expected to influence the economic decisions of users taken on the basis of the financial statements"*
CNC (Portugal)	NCRF 4, Paragraph 5 Issued in 2009, Revised and reissued in 2015	*"Material: Omissions or items misstatements are material if they can individually or collectively influence decisions of the users, based on the financial statements. Materiality depends on the size and nature of the omission or misrepresentation judged in the circumstances surrounding it. The size and nature of the item, or a combination of both, may be the determining factor."*
AICPA (International)	SAS 122, Paragraph 2 Issued in 2011	*"Misstatements, including omissions, are considered to be material if, individually or in the aggregate, they could reasonably be expected to influence economic decisions of users that are taken based on the financial statements."* ***A proposal was issued in June 2019 and is being revised to change the definition to*** *"Misstatements, including omissions, are considered to be material if there is a substantial likelihood that, individually or in the aggregate, they would influence the judgment of a reasonable user made based on the financial statements."*

Appendix 2. Materiality Application Process

Accountant Management Board	Accountant prepares the financial statements Management board prepares a set of financial and non-financial information Both judge on the materiality level to apply to the annual report.	Financial Statements Management Report
Auditor	Auditors make professional judgements regarding calculation of materiality level when testing the company's accounts. They issue independent opinion about the fairness and accuracy of the annual report.	External Auditor Opinion
Shareholders	Shareholders approve the annual report.	Annual Report
Users/Stakeholders	Users take decisions based on the annual report	Annual Report

Appendix 3. IFRS Practice Statement 2: *Making Materiality Judgements* – Issued in September 2017 by the IASB. Source: https://cdn.ifrs.org/-/media/project/disclosure-initative/disclosure-intiative-materiality-practice-statement/mps-project-summary-and-practice-statement.pdf

"The objective of IFRS Practice Statement *Making Materiality Judgements* is to assist management in presenting financial information about the entity that is useful to existing and potential investors, lenders and other creditors in making decisions about providing resources to the entity. The Practice Statement is not an IFRS. Consequently, entities applying IFRSs are not required to comply with the Practice Statement. However, it should be noted that materiality is a pervasive principle in IFRSs.

Step 1 – Identify: The entity identifies information that has the potential to be material. In doing so it considers the IFRS requirements applicable to its transactions, other events and conditions and its primary users' common information needs.

Step 2 – Assess: The entity then assesses whether the information identified in Step 1 is material. In making this assessment, the entity needs to consider quantitative (size) and qualitative (nature) factors.

Step 3 – Organize: In a next step, the entity organizes the information within the draft financial statements in a manner that supports clear and concise communication

Step 4 – Review: In the most important step, the entity then steps back and assesses the information provided in the draft financial statements as a whole. It needs to consider whether the information is material both individually and in combination with other information. This final assessment may lead to adding additional information or removing information that is now considered immaterial, aggregating, disaggregating or reorganizing information or even to begin the process again from Step 2."

Appendix 4. Materiality in Auditing

Regarding auditing, the IAASB sets high-quality international standards for auditing, assurance, and quality control, namely the International Standards of Auditing (ISA) that aim at strengthening the public confidence in the global accounting and audit profession. The main purpose of an audit is to "*enhance the degree of confidence of intended users in the financial statements*". (ISA 200, 2008, p. 72 §3). ISA 200 also states that to meet this confidence, the auditor searches to issue an opinion, with reasonable assurance, on whether the financial statements are, in *all material aspects*, in accordance to the financial reporting framework. Auditors' test the company's accounts based on representative samples, to obtain enough evidence if the financial statements are free from material misstatements (ICAEW, 2017)[65]. The materiality value is a baseline for the auditor to compare and decide if a misstatement has relevant impact and therefore must be adjusted in the financial statements. When deciding on its value, an auditor sets the extent and depth of the audit procedures. Lower materiality levels imply higher audit efforts, since the auditor is required to test any financial statement item above that level. This increases the extent of the procedures and associated audit costs, but also means a higher probability of detecting errors (Brennan & Gray, 2005).

The choice of the materiality value calls for auditors' professional judgement. The process begins with defining the *overall materiality* for the financial statements, by selecting the appropriate basis, an indicator, such as Earnings Before Taxes or Total Assets, which is then multiplied by a chosen percentage. To select the indicator, the auditor must have knowledge about the company's business, such as the entity's industry, life cycle, environment, and ownership structure. The next judgement is to apply a reasonable percentage to the indicator. Authors and professional have argued about which percentages to apply to the

[65] **ICAEW.** 2017. *Materiality in the audit of financial statements*.

indicators (Brennan & Gray, 2005) but the percentage applied and concluded it depends on the indicator chosen beforehand. A second value, the performance materiality, is calculated based on the overall value to detect individual material misstatements, which put together have a probability to reach a significant value and affect the financial statements (ICAEW, 2017). It is calculated by applying a percentage of the value of overall materiality, a percentage not defined in auditing regulations. Furthermore, auditors usually apply materiality levels specific to each class of transactions, called individual materiality. The auditing industry is highly concentrated around four companies called the *Big 4*: Deloitte, PwC, EY and KPMG. Problems of high concentration are the financial impact of market exits, the reduction of audit services quality and limitations for other audit companies possibly resulting in insufficient expertise (PCAOB, 2017)[66]. In Portugal, 45% of the revenues coming from the activity in 2018 corresponded to those four companies (Relvas, 2019)[67]. Moreover, PwC and EY were responsible for auditing 86% of the market capitalization value of the Portuguese companies listed in PSI-20 in 2018 (Lopes, 2019)[68]. The low rotativity between auditors is an issue and despite rules being implemented in Portugal to stop auditors testing the company's accounts more than eight or nine years. CMVM ruled that starting in 2016, it is mandatory to change auditor after two or three mandates, depending on whether they last four or three years.

[66] **PCAOB**. 2017. "Audit Industry Concentration and Potential Implications" Accessed November 7. https://pcaobus.org/News/Speech/Pages/Harris-Audit-Industry-Concentration-12-07-17.aspx.
[67] **Relvas, Rafaela**. 2019. "Concentração do mercado de auditoria preocupa CMVM". Negócios, September 26. https://www.jornaldenegocios.pt/empresas/banca---financas/detalhe/concentracao-do-mercado-de-auditoria-preocupa-cmvm.
[68] **Lopes, Bruno**. 2019. "Quem controla estes quatro gigantes?". Sábado, June 6. https://www.sabado.pt/dinheiro/detalhe/quem-controla-estes-quatro-gigantes.

Appendix 5. Variables

	Variable	Proxy	Categories	Source	Measurement
Company Characterization	*Market Cap*	Market Capitalization		Euronext	Scale
	Performance	Earnings Before Taxes		Annual report	Scale
	Assets	Total Assets		Annual report	Scale
	Leverage Ratio	Total Liabilities/Equity		Annual report	Scale
	ROA	Net Income/Total Assets		Annual report	Scale
	ROE	Net Income/Equity		Annual report	Scale
	Market-Book	Market Capitalization/(Total Assets-Total Liabilities)		Annual report	Scale
	PER	Market Capitalization/Net Income		Annual report	Scale
	PSI-20	Company belongs to PSI-20.	Yes = 1; No = 0	Euronext	Nominal
Financial Report Characterization	*Big 4*	Auditor is a Big 4 auditing companies.	Yes = 1; No = 0	Annual report	Nominal
	Audit Opinion	Audit report is unqualified, has an emphasis of matter or uncertainty about going concern, or qualified.	Unqualified = 1; Emphasis/Uncertainty = 2; Qualified = 3	Annual report	Nominal
	Consolidation	Annual report includes consolidated and annual financial statements or just the consolidated.	Consolidated and individual = 1 Consolidated = 2	Annual report	Nominal
	Non-financial	Annual report includes non-financial information or not.	Yes = 1; No = 0	Annual report	Nominal
Materiality	*Wording*	Words used when mentioning materiality.	Materiality, Material/Materially, Immaterial/Not material	Annual report	Nominal
	Location	Location of materiality appearances in annual report.	Management report, Notes to financial statement, External auditor report.	Annual report	Nominal
	Definition	Definition or not.	Yes = 1; No = 0	Annual report	Nominal
	Measurement	Quantifications or not, which criteria is used	Yes = 1; No = 0	Annual report	Nominal
	Format	Text or Figure.		Annual report	Nominal
	Items	Should disclose or discloses/ Balance sheet or income statement.		Annual report	Nominal
	Disclosure Index	Degree of materiality disclosure	Between 0 and 1	Annual report	Scale

Appendix 6. Initial Sample – Source of Data

Table 1) The Universe

Company	Inclusion	Source website
Corticeira Amorim	Yes	https://www.amorim.com/en/for-investors/annual-report/
Galp	Yes	https://www.galp.com/corp/en/investors/reports-and-presentations/reports-and-results
CTT	Yes	https://relatoriointegrado.ctt.pt/en/
EDP	Yes	https://www.edp.com/en/annualreport-2018
Navigator	Yes	http://en.thenavigatorcompany.com/Investors/Financial-Information
Altri	Yes	http://www.altri.pt/en/investors
EDP Renováveis	Yes	https://www.edpr.com/en/investors/investors-information/reports-and-results
Ibersol	Yes	http://www.ibersol.pt/investors/reports/annual-reports/
Jerónimo Martins	Yes	https://www.jeronimomartins.com/en/investors/presentations-and-reports/
Mota-Engil	Yes	http://www.mota-engil.com/en/investors/financial-information/
NOS	Yes	https://www.nos.pt/institucional/EN/investors/nos-in-numbers/Pages/results.aspx
Pharol	Yes	http://pharol.pt/en-us/informacao-financeira/relatorios/Pages/2018.aspx
Ramada	Yes	http://www.ramadainvestimentos.pt/en/investors/financial-reports/2018_1_1.html
REN	Yes	https://www.ren.pt/en-GB/investidores/relatorio_anual
Semapa	Yes	https://www.semapa.pt/index.php/pt-pt/investidores/informacao/demonstracoes
SONAE Capital	Yes	https://www.sonaecapital.pt/en/investors/financial-information
SONAE SGPS	Yes	https://www.sonae.pt/en/investors/financial-information/financial-data/
SLB	Yes	https://www.slbenfica.pt/pt-pt/slb/sad/prest_contas/contas_anuais
Cofina	Yes	http://www.cofina.pt/investors/reports/2019.aspx?sc_lang=en
Compta	No	https://www.compta.pt/en/investors/
Conduril	No	http://www.conduril.pt/en/grupoprestacaocontas.php
COPAM	No	http://www.copam.pt/#
Estoril Sol	Yes	http://www.estoril-solsgps.com/relatorios-e-contas/contas-anuais/
Farminveste	Yes	https://www.farminveste-sgps.com/kb/info-financeira-relatorios-contas/
Fenalu	No	http://www.fenalugip.pt/
Flexdeal	No	https://www.flexdeal.pt/investidor
FCP	Yes	https://www.fcporto.pt/pt/clube/institucional
Glintt	Yes	https://web3.cmvm.pt/SDI/emitentes/docs/PC71811.pdf
Imobiliária Grão Pará	Yes	http://www.graopara.pt/
Impresa	Yes	https://www.impresa.pt/en/investor-relations/relatorios-e-contas
Inapa	Yes	https://inapa.pt/pt/investidores/resultados/
Lisgráfica	Yes	http://www.lisgrafica.pt/anuais.htm
Litho Formas	No	http://www.lithoformas.pt/en/company/stakeholders/financial-reports/

(Continue on next page)

Table 1) The Universe (Continued)

Company	Inclusion	Source website
Martifer	Yes	http://www.martifer.pt/en/group/investor/publications/financial-information/?y=2018
Media Capital	Yes	https://www.mediacapital.pt/en/p/595/financial-results/
Novabase	Yes	https://www.novabase.pt/pt/dp/relatorios-contas
Oli Sistemas	No	https://www.oli-world.com/pt/empresa/relatorio-e-contas/
Orey Antunes	Yes	https://web3.cmvm.pt/sdi/emitentes/emit_pca.cfm?num_ent=%23%22%24G%5C%0A
Reditus	Yes	https://www.reditus.pt/pt-pt/investidores/relatorios-e-contas
SCBraga	No	https://scbraga.pt/administrativo/#relatriosandcontas
SONAE Indústrias	Yes	http://www.sonaeindustria.com/page.php?ctx=1,0,42
Sonaecom	Yes	http://www.sonae.com/investidores/informacao-financeira/relatorios/
Sonagi	Yes	http://www.sonagi.pt/node/15
SCP	No	https://www.sporting.pt/pt/node/31266
Teixeira Duarte	Yes	https://www.teixeiraduarte.pt/relatorios-anuais/
Toyota Caetano	Yes	https://toyotacaetano.pt/investidores/relatorios-e-contas/
Vista Alegre	Yes	https://web3.cmvm.pt/sdi/emitentes/docs/PC72036.pdf
BCP	No	https://ind.millenniumbcp.pt/en/Institucional/investidores/Pages/RelatorioContas.aspx
Monumental Res	No	https://web3.cmvm.pt/sdi/fundos/app/rc.cfm?num_fun=%24%23%24KX%220%20%20%0A
Multi24	No	https://web3.cmvm.pt/sdi/fundos/docs/A702055-FRC06269115540000020181231.pdf
Nexponor	No	https://www.nexponor.pt/#!investidores
Patris	No	https://www.patrisinvestimentos.pt/governo-societario#
Raize	No	https://www.raize.pt/investor-relations
ISA	No	https://www.isasensing.com/about-us/financial-indicators/#spu-5566
Sociedade das Águas da Curia	No	Annual report not available

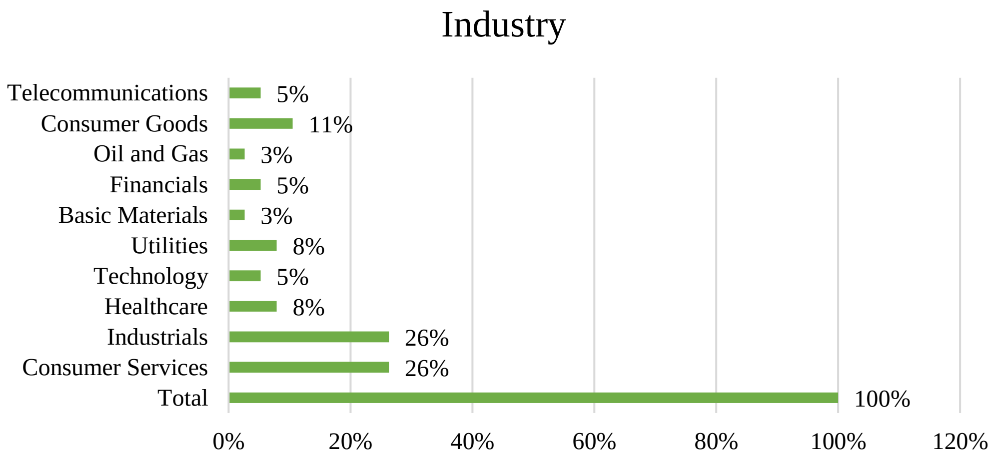
Table 2) The Sample

	# Companies
Initial Sample	55
Criteria for Exclusions	
Not following IFRS ……………………………………………	13
(Copam, Compta, Conduril, Fenalu, Flexdeal, Litho Formas, Oli Sistemas, SCBraga, Monumental Residence, Multi 24, Nexponor and Patris, Sporting CP)	
Sector-specific financial statements……………………	2
(BCP and Raize)	
Completeness of annual report…………………………………	1
(ISA)	
Engagement in recent transactions…………………………...	1
(Sociedade Águas da Curia)	
Final Sample	38

Appendix 7. Variables Statistical Analysis

A) Industry

Information about industry was collected in Euronext which segments industry types by ICB Sectorial Classification, a standard used to categorize and compare companies' industries and sector Companies in the sample belong to a total of 10 different industries. The industries with highest weight in the sample are Consumer Services and Industrials each with 26%, and Basic Materials with 11% weight in the sample.



B) Other Variables

Table 1) Summary Statistics

Variable	Mean	S.D.	Min	Mdn	Max
Leverage Ratio	1.58	3.61	-12.00	1.40	11.00
PER	7.87	14.59	-51.00	6.87	48.00
Market-to-Book	1.00	1.13	-0.82	0.74	4.69
ROA	4.44%	0.11	-29%	3.09%	54%
ROE	5.46%	0.36	-170%	8.74%	76%

Number of observations = 38

»*Leverage Ratio (Debt-to-Equity):* degree to which company uses debt to finance its assets/operations; the extent to which equity can meet its debts to creditors.
»*Price-to-Earnings (PER)*: using Market Cap/Net income as proxy, used to determine if shares are over or undervalued; current investor demand for the company's shares.
»*Market-to-Book*: used to evaluate market value of a company with its book value; shows market perception of stocks; how much equity are investors paying for each dollar in net assets; the price market believes the company is worth.
»*ROA:* how much profit can a company generate from its assets.
»*ROE*: measures profitability of a company in relation to equity, how profitable is the company in managing its equity.

Appendix 8. Materiality Quantification

Company	Location	Quantification
Corticeira Amorim	Management Report – Sustainability Report	Energy efficiency and climate change: Emissions outside Portugal were considered to be of marginal material importance (about 7%)
EDP	Management Report – Corporate Governance	Litigation risks: associated with losses arising from non-compliance with existing tax, labor, administrative, or civil legislation, or any other, that has an economic (penalties, compensation and agreements) and reputation impact. EDP Group analyses, monitors and reports the aggregate exposure and material developments to all relevant bodies, whether at the level of the Board of Directors or the General and Supervisory Board. In addition to overall exposure and by country, all cases deemed to be of a material nature (contingency over EUR 2.5 million) are collected, analyzed and reported individually.
Galp	Appendix – Payments to Governments	Other provisions: include all types of Payments to Public Administrations, either on a single payment basis or as part of a series of related payments, provided that these are above €100k
Inapa	Management Report – Corporate Governance	Related party transactions. Significant relevance are those operations which are above: Purchases and sales €750k, Financial investments €5M, Loans €10M and Other transactions €500k
Jerónimo Martins	Management Report – Corporate Governance	Related party transactions (Those between the company and shareholders with qualified holding or entities): transactions are relevant enough to be assessed by the audit committee when 1) Equal or higher than 3M€ or 20% of the sales of the respective SH; 2) The addition of the amount to amount of previous deals with same SH, during the same fiscal year, is equal or higher than 5M€, 3) Regardless of amount, may cause a material impact on the company's name concerning independence in relationships with SH with qualified holdings.
Mota-Engil	Notes to Financial Statements	Goodwill and Tangible Assets: if a discount rate higher in 0.5% or a growth rate in perpetuity lower in 0.5% or projected cash-flows lower in 5% had been used, the results of the abovementioned tests would not lead to the recognition of additional impairment losses.
REN	Management Report – Corporate Governance	Significant related party transactions are those which: 1) based on purchase and/or sale of assets, provision of services or contracted project greater than 1M€; 2) those based on acquisition or disposal of shareholdings; 3) require new loans, financing or subscription of financial investments resulting in annual indebtedness exceeding 100M€, except when referring to renewal of existing circumstances or operations taken within the framework of pre-existing contractual conditions.; 4) if none of the materiality criteria is met, any transactions which value exceeds 1M€ or considered relevant for this purpose by a management body because of its nature or its susceptibility that may give rise to conflict of interest.

Appendix 9. Materiality Matrices

Table 1) Description of matrices

Company	Variable in x-axis	Variable in y-axis	Material topics – Environment, society, human rights, corruption, others.	Material topics - Financial	# Topics	Scale	Mention Stakeholders	Auditor
Altri	Altri importance topics	Altri peer's importance topics	Sustainable management of the value chain; Local development and community support; Energy and climate change; Sustainable forest and biodiversity management; Human capital development and attraction and retention of talent; Stakeholder engagement; Environmental management; Health and Safety; Water management		25	No scale	Yes	EY
Corticeira Amorim	Level of importance of the topic for Corticeira Amorim	Level of importance of the topic for Corticeira Amorim´s stakeholders	Product Quality and Responsibility; Health and Safety at Work; Energy Efficiency and Climate Change; Product Environmental Impact; Research, Development and Innovation; Promotion of the "Montado", its Biodiversity and Ecosystem Services	Circular Economy; Economic Performance	19	High-Low	Yes	EY
CTT*	Importance of the topic for CTT	Importance of the topic for the stakeholders	Clients and client satisfaction; Data protection and security; Relation with employees; Energy, CO2 Emissions and Climate Change ***Two topics with X=0 » Waste management and public policy**	Economic performance and value created;	19	Y: 0-100%; X: 0-7	Yes	KPMG
EDP Renováveis	Relevance for the business	Relevance for society	Climate Change; Renewable Energy Promotion; Business Sustainability; Environmental Management; People Management; Health & Safety; Innovation; Communication & Transparency; Community Involvement & Development; Suppliers Management; Corporate Ethics	Corporate Governance;	11	-/+	Yes	PwC
Galp	Relevance for Galp	Relevance for stakeholders	Ethics, transparency, and compliance; Dialogue and stakeholder engagement; Sustainable supply chain management; Local community development; Training and development; Talent attraction and retention; Adequate portfolio to meet energy needs; Energy efficiency of operations, products and services; Disclosure of financial climate-related information; Research and Technology; Technological innovation and digitalization; Health, Safety and Environment; Sustainable use of resources; Diversity, equal opportunities and non-discrimination; Biodiversity and ecosystems	Corporate Governance; Risk Management;	17	-/+	No	PwC
NOS	Relevance NOS	Relevance stakeholders	Customer services; Corruption; Conduct; Privacy; Assessment & Development; Talent management; Responsible marketing; Response to emergency situations; Government of the company; Transparency and reliability of information; Health and safety at work; Working conditions; Access to contents; Intellectual property; Innovation & Entrepreneurship; Social impacts of supply chain; Stakeholder involvement	Economic value generated and distributed; Remuneration & Benefits; Conflict of interest;	35	-/+	Yes	EY
SONAE SGPS	Relevance for SONAE	Relevance for our stakeholders	Combating food waste; Community Involvement; Impact of plastic bags and packaging; Energy consumption, renewable energy and energy efficiency; Human capital development; Human rights; Sustainable agriculture and fishing; Eco-efficiency; Sustainable supply chain; Diversity, inclusion and equality opportunities; Waste management; Biodiversity protection	Responsible investment;	26	-/+	Yes	PwC

Table 2) Stakeholders

» The “X” means that the company mentions the corresponding stakeholder in the annual report, when the “X” is not found the stakeholder is not mentioned.

Stakeholder	Corticeira Amorim	Altri	CTT	EDP Renováveis	NOS	SONAE SGPS
Employees	X	X	X	X	X	X
Official/government entities/regulators	X	X	X	X	X	X
Shareholders/Investors	X	X	X	X		X
Customers	X	X	X		X	X
Suppliers	X	X		X	X	X
NGDs & Community	X	X		X	X	X
Media	X			X	X	X
Academic/scientific community		X		X		
Competitors			X	X		
Unions/workers committee			X	X		
Financial entities				X	X	
Partners/Civil Society	X					
International institutions & associations				X		
Municipalities				X		
Industry					X	
Shop tenants						X

Appendix 10. GRI Step-by-step Process to Define Materiality – Issued in November 2018 by the Global Reporting Initiative. Source: https://www.globalreporting.org/SiteCollectionDocuments/2018/CSE/Materiality%20Webinar%2029%20Nov%202018.pdf

1. Design the materiality analysis
2. Analysis of value chain
3. Identification of the initial list of topics
4. Execute the materiality analysis: a. impact assessment; b. assesses topics that substantively influence the assessments and decisions of stakeholders; c. set threshold and identify material topics; d. identification of material topics’ boundary
5. Materiality validation
6. Use of materiality for the reporting
7. Use of materiality beyond the reporting
8. Assess the process of materiality analysis

Apppendix 11. Materiality Disclosure Index

Variables considered in the MDI:

$$\boldsymbol{MDIm} = \left(\sum_{\boldsymbol{ijkl=1}}^{\boldsymbol{n}} \boldsymbol{di\,m + djm + dkm + dlm}\right) \div \boldsymbol{4}$$

MDIm – Disclosure Index for company *m*; *m* = 1, 2, …, 38.
dim – #Times - The median of total words found in the annual report is 29 [Median = (Total Words+1)/2]; *dim* > Median, company receives 1, *dim* < Median receives 0.
djm – Definition of materiality in Company *m* – *djm* = 1 if the company presents definition, *djm* = 0 if otherwise.
dkm – Quantification of materiality in Company *m* – 1 if the company presents concept, 0 if otherwise.
dlm– Matrix of materiality in Company *m* – *dlm* = 1 if the company presents matrix, *dlm* = 0 if otherwise.

Table 1) Materiality Disclosure Index

Company	#Times	Definition	Quantification	Matrix	Total	%
Galp	1	1	1	1	4	100%
Corticeira Amorim	1	0	1	1	3	75%
EDP Renováveis	1	1	0	1	3	75%
SONAE SGPS	1	0	0	1	2	50%
NOS	1	0	0	1	2	50%
Jerónimo Martins	1	0	1	0	2	50%
REN	1	0	1	0	2	50%
CTT	1	0	0	1	2	50%
Altri	1	0	0	1	2	50%
EDP	1	0	1	0	2	50%
Mota-Engil	1	0	1	0	2	50%
Inapa Investimos e Participações SA	1	0	1	0	2	50%
Ramada	1	0	0	0	1	25%
SONAE Capital	1	0	0	0	1	25%
SONAE Indústria	1	0	0	0	1	25%
Cofina	1	0	0	0	1	25%
Orey Antunes	1	0	0	0	1	25%
Sonaecom	1	0	0	0	1	25%
Ibersol	1	0	0	0	1	25%
Martifer	1	0	0	0	1	25%
FC Porto	1	0	0	0	1	25%
Pharol	0	0	0	0	0	0%
Semapa	0	0	0	0	0	0%
Media Capital	0	0	0	0	0	0%

(Continue on next page)

Table 1) Materiality Disclosure Index (Continued)

Company	#Times	Definition	Quantification	Matrix	Total	%
Estoril Sol	0	0	0	0	0	0%
Novabase	0	0	0	0	0	0%
Glintt	0	0	0	0	0	0%
Navigator	0	0	0	0	0	0%
Vista Alegre	0	0	0	0	0	0%
Toyota Caetano	0	0	0	0	0	0%
Impresa	0	0	0	0	0	0%
Reditus	0	0	0	0	0	0%
Teixeira Duarte	0	0	0	0	0	0%
SLBenfica	0	0	0	0	0	0%
Lisgráfica	0	0	0	0	0	0%
Farminveste	0	0	0	0	0	0%
I. G. Pará	0	0	0	0	0	0%
Sonagi	0	0	0	0	0	0%
Total	21	2	7	7	**Average = 24%**	

12. SPSS Results

A) Correlation between the total of times materiality appears in the annual report and other variables

		#Times	Market Cap	EBT	Total Assets	Leverage Ratio	PER	Price-to-Book	ROE	ROA
#Times	Pearson Correlation	1	,503**	,567**	,342*	,082	,256	,460**	,195	-,054
	Sig. (2-tailed)		,001	,000	,036	,624	,121	,004	,240	,749
	N	38	38	38	38	38	38	38	38	38
Market Cap	Pearson Correlation	,503**	1	,884**	,892**	,012	,380*	,355*	,085	,003
	Sig. (2-tailed)	,001		,000	,000	,944	,019	,029	,612	,987
	N	38	38	38	38	38	38	38	38	38
EBT	Pearson Correlation	,567**	,884**	1	,732**	,025	,272	,283	,075	,028
	Sig. (2-tailed)	,000	,000		,000	,880	,099	,085	,654	,867
	N	38	38	38	38	38	38	38	38	38
Total Assets	Pearson Correlation	,342*	,892**	,732**	1	,053	,314	,125	,046	-,044
	Sig. (2-tailed)	,036	,000	,000		,754	,055	,456	,786	,793
	N	38	38	38	38	38	38	38	38	38
Leverage Ratio	Pearson Correlation	,082	,012	,025	,053	1	,028	,238	-,021	-,163
	Sig. (2-tailed)	,624	,944	,880	,754		,869	,150	,899	,330
	N	38	38	38	38	38	38	38	38	38
PER	Pearson Correlation	,256	,380*	,272	,314	,028	1	,334*	,113	,000
	Sig. (2-tailed)	,121	,019	,099	,055	,869		,040	,498	1,000
	N	38	38	38	38	38	38	38	38	38
Price-to-Book	Pearson Correlation	,460**	,355*	,283	,125	,238	,334*	1	,265	,028
	Sig. (2-tailed)	,004	,029	,085	,456	,150	,040		,108	,866
	N	38	38	38	38	38	38	38	38	38
ROE	Pearson Correlation	,195	,085	,075	,046	-,021	,113	,265	1	,130
	Sig. (2-tailed)	,240	,612	,654	,786	,899	,498	,108		,437
	N	38	38	38	38	38	38	38	38	38
ROA	Pearson Correlation	-,054	,003	,028	-,044	-,163	,000	,028	,130	1
	Sig. (2-tailed)	,749	,987	,867	,793	,330	1,000	,866	,437	
	N	38	38	38	38	38	38	38	38	38

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

		#Times	PSI-20	Big 4	Consolidation	Nonfinancialinfo	Audit Report
#Times	Pearson Correlation	1	,676**	,472**	-,110	,466**	-,249
	Sig. (2-tailed)		,000	,003	,511	,003	,132
	N	38	38	38	38	38	38
PSI-20	Pearson Correlation	,676**	1	,335*	,186	,263	-,239
	Sig. (2-tailed)	,000		,040	,264	,110	,148
	N	38	38	38	38	38	38
Big 4	Pearson Correlation	,472**	,335*	1	-,066	,567**	-,342*
	Sig. (2-tailed)	,003	,040		,695	,000	,036
	N	38	38	38	38	38	38
Consolidation	Pearson Correlation	-,110	,186	-,066	1	-,011	,294
	Sig. (2-tailed)	,511	,264	,695		,948	,073
	N	38	38	38	38	38	38
Nonfinancialinfo	Pearson Correlation	,466**	,263	,567**	-,011	1	-,038
	Sig. (2-tailed)	,003	,110	,000	,948		,823
	N	38	38	38	38	38	38
Audit Report	Pearson Correlation	-,249	-,239	-,342*	,294	-,038	1
	Sig. (2-tailed)	,132	,148	,036	,073	,823	
	N	38	38	38	38	38	38

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

B) Correlation between materiality appearances in management report and other variables

		MR	Market Cap	EBT	Total Assets	Leverage Ratio	PER	Price-to-Book	ROE	ROA
MR	Pearson Correlation	1	,587**	,635**	,425**	,078	,309	,388*	,202	,039
	Sig. (2-tailed)		,000	,000	,008	,640	,059	,016	,225	,816
	N	38	38	38	38	38	38	38	38	38
Market Cap	Pearson Correlation	,587**	1	,884**	,892**	,012	,380*	,355*	,085	,003
	Sig. (2-tailed)	,000		,000	,000	,944	,019	,029	,612	,987
	N	38	38	38	38	38	38	38	38	38
EBT	Pearson Correlation	,635**	,884**	1	,732**	,025	,272	,283	,075	,028
	Sig. (2-tailed)	,000	,000		,000	,880	,099	,085	,654	,867
	N	38	38	38	38	38	38	38	38	38
Total Assets	Pearson Correlation	,425**	,892**	,732**	1	,053	,314	,125	,046	-,044
	Sig. (2-tailed)	,008	,000	,000		,754	,055	,456	,786	,793
	N	38	38	38	38	38	38	38	38	38
Leverage Ratio	Pearson Correlation	,078	,012	,025	,053	1	,028	,238	-,021	-,163
	Sig. (2-tailed)	,640	,944	,880	,754		,869	,150	,899	,330
	N	38	38	38	38	38	38	38	38	38
PER	Pearson Correlation	,309	,380*	,272	,314	,028	1	,334*	,113	,000
	Sig. (2-tailed)	,059	,019	,099	,055	,869		,040	,498	1,000
	N	38	38	38	38	38	38	38	38	38
Price-to-Book	Pearson Correlation	,388*	,355*	,283	,125	,238	,334*	1	,265	,028
	Sig. (2-tailed)	,016	,029	,085	,456	,150	,040		,108	,866
	N	38	38	38	38	38	38	38	38	38
ROE	Pearson Correlation	,202	,085	,075	,046	-,021	,113	,265	1	,130
	Sig. (2-tailed)	,225	,612	,654	,786	,899	,498	,108		,437
	N	38	38	38	38	38	38	38	38	38
ROA	Pearson Correlation	,039	,003	,028	-,044	-,163	,000	,028	,130	1
	Sig. (2-tailed)	,816	,987	,867	,793	,330	1,000	,866	,437	
	N	38	38	38	38	38	38	38	38	38

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

		MR	PSI-20	Big 4	Consolidation	Nonfinancialinfo	Audit Report
MR	Pearson Correlation	1	,644**	,391*	-,049	,271	-,232
	Sig. (2-tailed)		,000	,015	,770	,100	,162
	N	38	38	38	38	38	38
PSI-20	Pearson Correlation	,644**	1	,335*	,186	,263	-,239
	Sig. (2-tailed)	,000		,040	,264	,110	,148
	N	38	38	38	38	38	38
Big 4	Pearson Correlation	,391*	,335*	1	-,066	,567**	-,342*
	Sig. (2-tailed)	,015	,040		,695	,000	,036
	N	38	38	38	38	38	38
Consolidation	Pearson Correlation	-,049	,186	-,066	1	-,011	,294
	Sig. (2-tailed)	,770	,264	,695		,948	,073
	N	38	38	38	38	38	38
Nonfinancialinfo	Pearson Correlation	,271	,263	,567**	-,011	1	-,038
	Sig. (2-tailed)	,100	,110	,000	,948		,823
	N	38	38	38	38	38	38
Audit Report	Pearson Correlation	-,232	-,239	-,342*	,294	-,038	1
	Sig. (2-tailed)	,162	,148	,036	,073	,823	
	N	38	38	38	38	38	38

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

C) Correlation between materiality appearances in the notes and other variables

		Notes	Market Cap	EBT	Total Assets	Leverage Ratio	PER	Price-to-Book	ROE	ROA
Notes	Pearson Correlation	1	,087	,101	,062	-,011	,051	,223	,198	-,138
	Sig. (2-tailed)		,602	,548	,711	,948	,761	,178	,234	,408
	N	38	38	38	38	38	38	38	38	38
Market Cap	Pearson Correlation	,087	1	,884**	,892**	,012	,380*	,355*	,085	,003
	Sig. (2-tailed)	,602		,000	,000	,944	,019	,029	,612	,987
	N	38	38	38	38	38	38	38	38	38
EBT	Pearson Correlation	,101	,884**	1	,732**	,025	,272	,283	,075	,028
	Sig. (2-tailed)	,548	,000		,000	,880	,099	,085	,654	,867
	N	38	38	38	38	38	38	38	38	38
Total Assets	Pearson Correlation	,062	,892**	,732**	1	,053	,314	,125	,046	-,044
	Sig. (2-tailed)	,711	,000	,000		,754	,055	,456	,786	,793
	N	38	38	38	38	38	38	38	38	38
Leverage Ratio	Pearson Correlation	-,011	,012	,025	,053	1	,028	,238	-,021	-,163
	Sig. (2-tailed)	,948	,944	,880	,754		,869	,150	,899	,330
	N	38	38	38	38	38	38	38	38	38
PER	Pearson Correlation	,051	,380*	,272	,314	,028	1	,334*	,113	,000
	Sig. (2-tailed)	,761	,019	,099	,055	,869		,040	,498	1,000
	N	38	38	38	38	38	38	38	38	38
Price-to-Book	Pearson Correlation	,223	,355*	,283	,125	,238	,334*	1	,265	,028
	Sig. (2-tailed)	,178	,029	,085	,456	,150	,040		,108	,866
	N	38	38	38	38	38	38	38	38	38
ROE	Pearson Correlation	,198	,085	,075	,046	-,021	,113	,265	1	,130
	Sig. (2-tailed)	,234	,612	,654	,786	,899	,498	,108		,437
	N	38	38	38	38	38	38	38	38	38
ROA	Pearson Correlation	-,138	,003	,028	-,044	-,163	,000	,028	,130	1
	Sig. (2-tailed)	,408	,987	,867	,793	,330	1,000	,866	,437	
	N	38	38	38	38	38	38	38	38	38

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

		Notes	PSI-20	Big 4	Consolidation	Nonfinanciali nfo	Audit Report
Notes	Pearson Correlation	1	,373*	,384*	-,214	,401*	-,257
	Sig. (2-tailed)		,021	,017	,196	,013	,119
	N	38	38	38	38	38	38
PSI-20	Pearson Correlation	,373*	1	,335*	,186	,263	-,239
	Sig. (2-tailed)	,021		,040	,264	,110	,148
	N	38	38	38	38	38	38
Big 4	Pearson Correlation	,384*	,335*	1	-,066	,567**	-,342*
	Sig. (2-tailed)	,017	,040		,695	,000	,036
	N	38	38	38	38	38	38
Consolidation	Pearson Correlation	-,214	,186	-,066	1	-,011	,294
	Sig. (2-tailed)	,196	,264	,695		,948	,073
	N	38	38	38	38	38	38
Nonfinancialinfo	Pearson Correlation	,401*	,263	,567**	-,011	1	-,038
	Sig. (2-tailed)	,013	,110	,000	,948		,823
	N	38	38	38	38	38	38
Audit Report	Pearson Correlation	-,257	-,239	-,342*	,294	-,038	1
	Sig. (2-tailed)	,119	,148	,036	,073	,823	
	N	38	38	38	38	38	38

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

D) Correlation between materiality appearances in audit report and other variables

		Audit	Market Cap	EBT	Total Assets	Leverage Ratio	PER	Price-to-Book	ROE	ROA
Audit	Pearson Correlation	1	-,037	,068	-,147	,124	-,079	,285	-,266	-,146
	Sig. (2-tailed)		,827	,686	,379	,457	,637	,083	,107	,382
	N	38	38	38	38	38	38	38	38	38
Market Cap	Pearson Correlation	-,037	1	,884**	,892**	,012	,380*	,355*	,085	,003
	Sig. (2-tailed)	,827		,000	,000	,944	,019	,029	,612	,987
	N	38	38	38	38	38	38	38	38	38
EBT	Pearson Correlation	,068	,884**	1	,732**	,025	,272	,283	,075	,028
	Sig. (2-tailed)	,686	,000		,000	,880	,099	,085	,654	,867
	N	38	38	38	38	38	38	38	38	38
Total Assets	Pearson Correlation	-,147	,892**	,732**	1	,053	,314	,125	,046	-,044
	Sig. (2-tailed)	,379	,000	,000		,754	,055	,456	,786	,793
	N	38	38	38	38	38	38	38	38	38
Leverage Ratio	Pearson Correlation	,124	,012	,025	,053	1	,028	,238	-,021	-,163
	Sig. (2-tailed)	,457	,944	,880	,754		,869	,150	,899	,330
	N	38	38	38	38	38	38	38	38	38
PER	Pearson Correlation	-,079	,380*	,272	,314	,028	1	,334*	,113	,000
	Sig. (2-tailed)	,637	,019	,099	,055	,869		,040	,498	1,000
	N	38	38	38	38	38	38	38	38	38
Price-to-Book	Pearson Correlation	,285	,355*	,283	,125	,238	,334*	1	,265	,028
	Sig. (2-tailed)	,083	,029	,085	,456	,150	,040		,108	,866
	N	38	38	38	38	38	38	38	38	38
ROE	Pearson Correlation	-,266	,085	,075	,046	-,021	,113	,265	1	,130
	Sig. (2-tailed)	,107	,612	,654	,786	,899	,498	,108		,437
	N	38	38	38	38	38	38	38	38	38
ROA	Pearson Correlation	-,146	,003	,028	-,044	-,163	,000	,028	,130	1
	Sig. (2-tailed)	,382	,987	,867	,793	,330	1,000	,866	,437	
	N	38	38	38	38	38	38	38	38	38

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

		Audit	PSI-20	Big 4	Consolidation	Nonfinanciali nfo	Audit Report
Audit	Pearson Correlation	1	,003	-,020	,101	,421**	,241
	Sig. (2-tailed)		,986	,906	,547	,008	,145
	N	38	38	38	38	38	38
PSI-20	Pearson Correlation	,003	1	,335*	,186	,263	-,239
	Sig. (2-tailed)	,986		,040	,264	,110	,148
	N	38	38	38	38	38	38
Big 4	Pearson Correlation	-,020	,335*	1	-,066	,567**	-,342*
	Sig. (2-tailed)	,906	,040		,695	,000	,036
	N	38	38	38	38	38	38
Consolidation	Pearson Correlation	,101	,186	-,066	1	-,011	,294
	Sig. (2-tailed)	,547	,264	,695		,948	,073
	N	38	38	38	38	38	38
Nonfinancialinfo	Pearson Correlation	,421**	,263	,567**	-,011	1	-,038
	Sig. (2-tailed)	,008	,110	,000	,948		,823
	N	38	38	38	38	38	38
Audit Report	Pearson Correlation	,241	-,239	-,342*	,294	-,038	1
	Sig. (2-tailed)	,145	,148	,036	,073	,823	
	N	38	38	38	38	38	38

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

E) Correlation between the Materiality Disclosure Index and other variables

		Index	Market Cap	EBT	Total Assets	Leverage Ratio	PER	Price-to-Book	ROE	ROA
Index	Pearson Correlation	1	,596**	,661**	,471**	,108	,326*	,333*	,076	-,062
	Sig. (2-tailed)		,000	,000	,003	,518	,046	,041	,652	,713
	N	38	38	38	38	38	38	38	38	38
Market Cap	Pearson Correlation	,596**	1	,884**	,892**	,012	,380*	,355*	,085	,003
	Sig. (2-tailed)	,000		,000	,000	,944	,019	,029	,612	,987
	N	38	38	38	38	38	38	38	38	38
EBT	Pearson Correlation	,661**	,884**	1	,732**	,025	,272	,283	,075	,028
	Sig. (2-tailed)	,000	,000		,000	,880	,099	,085	,654	,867
	N	38	38	38	38	38	38	38	38	38
Total Assets	Pearson Correlation	,471**	,892**	,732**	1	,053	,314	,125	,046	-,044
	Sig. (2-tailed)	,003	,000	,000		,754	,055	,456	,786	,793
	N	38	38	38	38	38	38	38	38	38
Leverage Ratio	Pearson Correlation	,108	,012	,025	,053	1	,028	,238	-,021	-,163
	Sig. (2-tailed)	,518	,944	,880	,754		,869	,150	,899	,330
	N	38	38	38	38	38	38	38	38	38
PER	Pearson Correlation	,326*	,380*	,272	,314	,028	1	,334*	,113	,000
	Sig. (2-tailed)	,046	,019	,099	,055	,869		,040	,498	1,000
	N	38	38	38	38	38	38	38	38	38
Price-to-Book	Pearson Correlation	,333*	,355*	,283	,125	,238	,334*	1	,265	,028
	Sig. (2-tailed)	,041	,029	,085	,456	,150	,040		,108	,866
	N	38	38	38	38	38	38	38	38	38
ROE	Pearson Correlation	,076	,085	,075	,046	-,021	,113	,265	1	,130
	Sig. (2-tailed)	,652	,612	,654	,786	,899	,498	,108		,437
	N	38	38	38	38	38	38	38	38	38
ROA	Pearson Correlation	-,062	,003	,028	-,044	-,163	,000	,028	,130	1
	Sig. (2-tailed)	,713	,987	,867	,793	,330	1,000	,866	,437	
	N	38	38	38	38	38	38	38	38	38

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

		Index	PSI-20	Big 4	Consolidation	Nonfinancialinfo	Audit Report
Index	Pearson Correlation	1	,619**	,412*	,017	,268	-,214
	Sig. (2-tailed)		,000	,010	,920	,104	,196
	N	38	38	38	38	38	38
PSI-20	Pearson Correlation	,619**	1	,335*	,186	,263	-,239
	Sig. (2-tailed)	,000		,040	,264	,110	,148
	N	38	38	38	38	38	38
Big 4	Pearson Correlation	,412*	,335*	1	-,066	,567**	-,342*
	Sig. (2-tailed)	,010	,040		,695	,000	,036
	N	38	38	38	38	38	38
Consolidation	Pearson Correlation	,017	,186	-,066	1	-,011	,294
	Sig. (2-tailed)	,920	,264	,695		,948	,073
	N	38	38	38	38	38	38
Nonfinancialinfo	Pearson Correlation	,268	,263	,567**	-,011	1	-,038
	Sig. (2-tailed)	,104	,110	,000	,948		,823
	N	38	38	38	38	38	38
Audit Report	Pearson Correlation	-,214	-,239	-,342*	,294	-,038	1
	Sig. (2-tailed)	,196	,148	,036	,073	,823	
	N	38	38	38	38	38	38

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).